DM-RMC-SCALER-C

DigitalMedia 8G+® Receiver & Room Controller w/Scaler

- *DigitalMedia 8G+® receiver, high-definition scaler, and display controller*
- *Connects to a DM® switcher or transmitter over a single CAT type twisted pair cable[1]*
- *Supports cable lengths up to 330 ft (100 m) using DM 8G® cable or CAT5e[1]*
- *HDBaseT® Certified — Enables direct connection to other HDBaseT certified equipment*
- *Provides one HDMI® or DVI display output[2]*
- *Handles any video resolution from standard NTSC 480i or PAL 576i, to HD 1080p60 w/Deep Color*
- *Handles any computer resolution from VGA to UXGA/WUXGA*
- *Scales the signal to match the native resolution of virtually any digital video display or computer monitor up to 1080p or WUXGA*
- *Provides intelligent frame rate conversion*
- *Includes content-adaptive noise reduction*
- *Allows motion-adaptive de-interlacing or interlacing*
- *Allows adjustable overscan or underscan up to 7.5%*
- *Provides automatic 3D to 2D signal conversion[3]*
- *Automatically passes 3D video without scaling to 3D capable displays[3]*
- *Supports left/right eye steering for dual-projector 3D setups[3]*
- *Scalable zoom feature enables 2x2, 3x2, 3x3, 4x3, or 4x4 video wall capability[6]*
- *Handles Dolby® TrueHD, DTS-HD®, and uncompressed 7.1 linear PCM audio*
- *HDCP compliant*
- *Provides a 10/100 Ethernet LAN connection*
- *Enables device control via CEC, IR, RS-232, and Ethernet*
- *Enables USB HID signal extension for a local keyboard/mouse*
- *Compatible with Crestron® USB over Ethernet Extenders[5]*
- *Allows quick, easy setup and diagnostics*
- *Low-profile design mounts to a 2-gang US, UK, or European wall box*
- *Universal power pack included*

The DM-RMC-SCALER-C provides an advanced one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+® receiver, video scaler, and control interface. It provides a single HDMI® output along with Ethernet, USB HID, RS-232, and IR control ports. In addition to DM 8G+, it is also compatible with HDBaseT®, allowing it to be connected directly to an HDBaseT certified source. Built-in scaling enables the connected display to handle any video resolution up to HD 1080p or WUXGA. Its compact, low-profile design allows the DM-RMC-SCALER-C to be installed discreetly behind a flat panel display or above a ceiling mounted projector. It connects to the head end or source location using a single CAT type twisted pair cable.[1]

DigitalMedia 8G+®

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM is called DigitalMedia 8G™ (DM 8G®). Engineered for ultra high-bandwidth and ultimate scalability, DM 8G provides a true one-wire lossless transport for moving high-definition video, audio, Ethernet, and control signals over a choice of twisted pair or fiber optic cable.

DM 8G over twisted pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p video signals with support for 3D, Deep Color, and HDCP, as well as computer signals up to WUXGA. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over a single CAT type cable, supporting distances up to 330 feet (100 m) using Crestron DM 8G Cable or CAT5e.[1]

HDBaseT® Certified

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ input, the DM-RMC-SCALER-C can be connected directly to an HDBaseT compliant source without requiring a DM transmitter.

Multimedia Display Interface

A single HDMI digital AV output port is provided on the DM-RMC-SCALER-C for connection to a display or other device. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable[2].

A single CAT type cable connects the DM-RMC-SCALER-C to a DM switcher or transmitter, or to an HDBaseT source, transporting video, audio, control, and networking signals all through one simple RJ45 connection.[1] Multiple DM-RMC-SCALER-Cs may be installed to handle each display in a multiroom distribution system, all fed from a central DM-MD series

DM-RMC-SCALER-C DigitalMedia 8G+® Receiver & Room Controller w/Scaler

DM-RMC-SCALER-C — Rear, Top, Front, and Bottom Views

switcher. Or, a single DM-RMC-SCALER-C can be fed straight from a DM 8G+ or HDBaseT transmitter, affording a simple solution for extending a computer or AV signal to a single display.

High-Definition Scaler

Through a distributed scaler approach, DigitalMedia truly delivers the most flexible and user-friendly solution for routing multiple disparate sources to many different display devices. By placing an independent high-performance scaler at every display device, DM ensures an optimal image on every screen no matter what sources are selected. Distributed scaling allows a high-res computer source to be viewed on any display in the building. It also allows a high-definition 3D source to be viewed on lower-resolution 2D displays without compromising the original signal, letting you share your theater's full HD 1080p 3D image with smaller, lesser displays in other rooms.

The DM-RMC-SCALER-C accepts any video source from standard NTSC 480i to Full HD 1080p60, as well as computer sources from VGA to UXGA/WUXGA, and scales them perfectly to match the native resolution of your video display. A range of common output resolutions are supported to work with virtually any popular flat-panel display, projector, or computer monitor. Intelligent frame rate conversion enables support for 24p and PAL format sources, and 3D to 2D conversion allows 3D content to be fed simultaneously to separate 3D and 2D displays.[3] Setup and use of the scaler is simplified through fully automatic operation utilizing the display's EDID[4].

Dual-Projector 3D Support

A pair of DM-RMC-SCALER-Cs can be used to facilitate a dual-projector 3D setup, steering just the left eye portion of a 3D signal to one projector, and the right eye portion to the other. This is done using the scaler's 3D to 2D conversion mode, enabling 3D capability with scaling.[3]

Video Wall Processing

The DM-RMC-SCALER-C has another trick up its sleeve, providing zoom capability and bezel compensation on its output to display just a portion of the source image. Using this feature, multiple units may be combined to configure a video wall composed of up to 16 individual displays. Configurations of 2x2, 3x2, 3x3, 4x3, or 4x4 are supported, and all that is required is a separate DM-RMC-SCALER-C for each display, and a DM switcher with sufficient DM 8G+ outputs.

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-RMC-SCALER-C includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

USB Signal Extension

DigitalMedia allows for the routing of USB signals alongside video and audio. A USB HID compliant mouse or keyboard can be connected directly to the DM-RMC-SCALER-C and used to control a computer or media server that's located at the central equipment cabinet or some other location. Crestron also offers USB over Ethernet Extender Modules (USB-EXT-DM)[5], which may be added to enable support for more USB devices of virtually any type.

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Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. The DM-RMC-SCALER-C includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. But, it can also provide an alternative to such conventional control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-RMC-SCALER-C provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Low-Profile Installation

Its low-profile design makes the DM-RMC-SCALER-C perfect for installation behind a flat panel display or above a ceiling mounted projector. It mounts to a standard 2-gang US, UK, or European electrical box using the mounting bracket provided, affording a clean installation that protrudes a mere 1-1/8 inches (29 mm) from the mounting surface.

Connections for the display device are all positioned along the top and bottom of the unit for a clean, serviceable installation. The DigitalMedia connection is provided on the rear panel within the electrical box. An array of indicators is provided on the front panel for easy setup and troubleshooting.

Please refer to the DigitalMedia Resources Webpage at http://www.crestron.com/dmresources/ for additional design tools and reference documents.

SPECIFICATIONS

Video

Scaler: HD video scaler, motion-adaptive deinterlacer, interlacer, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion[3], content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1), video wall processing (2x2, 3x2, 3x3, 4x3, or 4x4)[6]

Input Signal Types: DM 8G+® (DigitalMedia™ over one CAT type twisted pair copper wire), HDBaseT® [1]

Output Signal Types: HDMI®, DVI[2]

Formats: DM 8G+, HDBaseT, & HDMI w/Deep Color & 3D[3]; DVI; HDCP content protection support

Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

Scaler Output Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz[7], 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz[7], 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz[7], 1400x1050@60Hz[7], 1440x900@60Hz[7], 1600x900@60Hz[8], 1600x1200@60Hz, 1680x1050@60Hz[7], 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz[8], 2048x1152@60Hz[8]

Scaler Output Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30)

Pass-Thru Output Resolutions: Matched to input

Audio

Input Signal Types: DM 8G+, HDBaseT

Output Signal Type: HDMI

Formats: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

USB: Supports signal extension of USB HID class devices, expandable to support virtually any USB 1.1 or 2.0 device using Crestron USB-EXT-DM USB over Ethernet Extenders[5]

RS-232: 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking

IR/Serial: 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

DigitalMedia: DM 8G+, HDCP, EDID, CEC, Ethernet

HDBaseT: HDCP, EDID, Ethernet

HDMI: HDCP, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI device and a control system

Connectors – Bottom

HDMI OUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
Also supports DVI[2]

USB HID: (1) USB Type A female;
USB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device

COM: (1) 5-pin 3.5mm detachable terminal block;
Bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support

IR 1 – 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) IR/Serial ports;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

Connectors – Top

LAN: (1) 8-wire RJ45 female, shielded;
10Base-T/100Base-TX Ethernet port

24VDC 0.75A MAX: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

Connectors – Rear

G: (1) 6-32 screw, chassis ground lug

DM IN: (1) 8-pin RJ45 female, shielded;
DM 8G+ input, HDBaseT compliant;
Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable[1]

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via local power pack
DM LINK: (1) green LED, indicates DM link status
VIDEO: (1) green LED, indicates video signal presence and lock status
USB HID: (1) green LED, indicates a valid device connection and activity on the USB HID port
SETUP: (1) red LED and (1) miniature recessed pushbutton, for Ethernet setup
RESET: (1) miniature recessed pushbutton, for hardware reset
LAN (Top): (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
DM IN (Rear): (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Environmental

Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 41 BTU/Hr

Enclosure

Chassis: Metal, black finish, vented sides and front
Mounting: Mounts to a 2-gang electrical box, 2-gang UK (BS 4662) electrical box, or 2-gang European (DIN 49073) electrical box

Dimensions

Height: 7.62 in (194 mm)
Width: 7.61 in (194 mm)
Depth: 1.46 in (37 mm)

Weight

1.90 lb (0.87 kg)

MODELS & ACCESSORIES

Available Models

DM-RMC-SCALER-C: DigitalMedia 8G+® Receiver & Room Controller w/Scaler

Included Accessories

PW-2407WU: Wall Mount Power Pack 24VDC, 0.75A, Universal (Qty. 1 included)

Available Accessories

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum
DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum
DM-8G-CONN: Connector for DM-CBL-8G DigitalMedia 8G™ Cable
DM-8G-CRIMP: Crimping Tool for DM-8G-CONN
DM-8G-CONN-WG: Connector with Wire Guide for DM-CBL-8G DigitalMedia 8G™ Cable
DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG
CBL Series: Crestron® Certified Interface Cables
MP-WP Series: Media Presentation Wall Plates
MPI-WP Series: Media Presentation Wall Plates - International Version
CNSP-XX: Custom Serial Interface Cable
IRP2: IR Emitter Probe w/Terminal Block Connector
USB-EXT-DM: USB over Ethernet Extender with Routing

Notes:

1. For DM 8G+ or HDBaseT wiring, use Crestron DM-CBL-8G DigitalMedia 8G Cable or third-party CAT5e (or better) UTP or STP. (Crestron legacy DM-CBL DigitalMedia Cable or DM-CBL-D DigitalMedia D Cable may also be used.) The maximum wire length for DM 8G+ is 330 ft (100 m) between devices. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the Crestron DigitalMedia Design Guide, Doc. #4546 for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cables are available separately.
3. Automatically passes 3D video if the display device supports it (reverts to pass-through mode without scaling). Provides automatic 3D-to-2D conversion (with scaling) if the display device does not support 3D. 3D with scaling is only supported using two DM-RMC-SCALER-Cs configured for use with a dual-projector 3D setup.
4. EDID (Extended Display Identification Data) is data embedded in an HDMI, DVI, or VGA signal that enables a display device to tell the source device what resolutions and formats it can support, allowing the source to configure itself automatically to feed the best signal that both devices can support.
5. USB-EXT-DM USB over Ethernet Extender Modules are sold separately. Refer to the USB-EXT-DM spec sheet for more information.

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6. Video wall processing requires a separate DM-RMC-SCALER-C for each individual display.
7. With or without reduced blanking.
8. With reduced blanking only.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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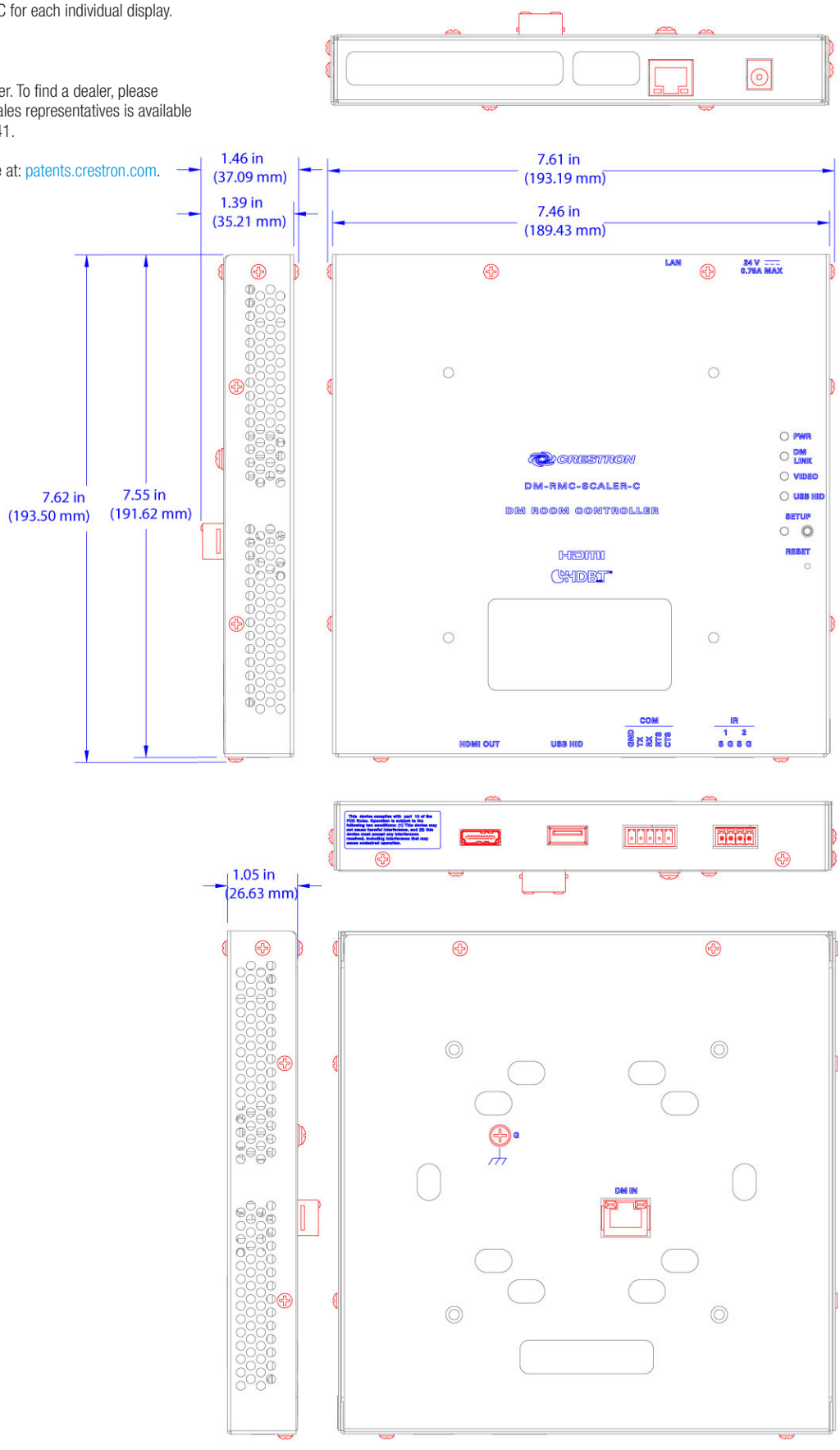

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